

BLOCK 1421LOT 14ADDRESS (SITE) 2282 LANES MILLS RD.PERMIT NO. 2947-93

CONSTRUCTION PERMIT APPLICATION

Applicant Completes: Sections I, II, III (optional), IV, VI and VII

I. IDENTIFICATION

1. Proposed Work-site at: HERBERTSVILLE SCHOOL 2282 LANES MILL RD

2. Name of Owner in Fee: BRICK Bd. OF EDUCATION Tel. (908) 477-2800

Address HENDRICKSON BLVD BRICK
street municipality zip code

3. Ownership in Fee: Public ☒ Private ☐

4. Principal Contractor: WARDELL SECURITY Tel. (908) 363-0550

Address PO Box 44 HOWELL, NJ 07731

License No. OR, if new home, Builder Reg. No. _____ Exp. Date _____

Federal Emp. No. 22-2136974/000 Social Security No. _____

5. Architect or Engineer _____ Tel. (____) _____

Address _____

6. Responsible Person In Charge of Work: EDWARD B. WARDELL Tel. (908) 363-0550

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	\$		
2. Electrical			
3. Plumbing			
4. Fire Protection	<u>EXMPT. 85</u>		
5. Other			
6. Subtotal	\$		
7. Less 20% for State Plan Review			
8. Subtotal	\$		
9. DCA Training Fee			
10. Subtotal	\$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	\$		

VI. BUILDING/SITE CHARACTERISTICS

	(office use only)
1. Number of Stories	
2. Height of Structure	_____ ft.
3. Area—Largest Floor	_____ sq. ft.
4. Building Area—All Floors	_____ sq. ft.
5. Volume of Structure	_____ cu. ft.
6. Construction Classification	
7. Total Land Area Disturbed	_____ sq. ft.
8. Flood Hazard Zone	
9. Base Flood Elevation	_____ ft.
10. Wetlands yes _____ sq. ft.	
no _____	
11. Fire Grading	
12. Max. Live Load	
13. Max. Occupancy Load	

II. PROPOSED WORK

1. ☐ Minor Work (single trade)

2. ☐ Small Job (\$5,000 and no prior approvals)

3. ☐ New Building

4. ☐ Addition

5. ☐ Alteration

6. ☒ Fire Protection \$5000.

7. ☐ Plumbing

8. ☐ Electrical

9. ☐ Asbestos Abatement

10. ☐ Demolition

TOTAL COSTS _____

OPTIONAL (for office use only)

Plans Rec'd By	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Rejection	Re-viewer
<u>6.10</u>	<u>12/9/93</u>		<u>12/9/93</u>	<u>LC</u>			

III. DO YOU WANT: (optional) 1. ☐ Partial Releases 2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

- | | | |
|---|---|---|
| 1. ☐ Elevators/Escalators/Lifts/Dumbwaiters/Moving Walks | 3. ☐ Pressure Vessels | 6. ☐ Hazardous Uses/Places of Assembly |
| 2. ☐ High Pressure Boilers | 4. ☐ Refrigeration Systems | 7. ☐ Sprinklers |
| | 5. ☐ Cross-Connections/Backflow Preventers | 8. ☐ Smoke Control Systems in Open Wells |
| | | 9. ☐ Underground Storage Tanks |

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL

1. ☐ Hotels (R-1)
2. ☐ Multi-Family (R-2)
3. ☐ Two-Family (R-3) BOCA
4. ☐ Two-Family (R-4) CABO
5. ☐ One-Family (R-3) BOCA
6. ☐ One-Family (R-4) CABO
- No of dwelling units: _____
- Before Construction _____
- After Construction _____
- Net gain or loss _____

B. NON-RESIDENTIAL

1. State Specific Use: _____
2. Use Group: _____
3. Change in Use Group, Indicate Former: _____

LDS BR 10521354

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(e)1.vii:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION

(to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:32-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

☒ Check if contractor.

Agent Name WARDELL SECURITY SERVICES

Address PO Box 44
HOWELL, NJ 07731

Telephone (908) 363-0550

Signature [Signature] Date 12/8/93

OFFICE DATE RECEIVED: _____

VIII. PRIOR APPROVALS CHECKLIST (office use only)	LOCAL APPROVAL		COUNTY APPROVAL		REGIONAL APPROVAL		STATE APPROVAL		COMMENTS
	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	
☐ Planning Board									
☐ Zoning Board									
☐ Sewer Authority									
☐ Water Authority									
☐ Fire Department									
☐ Police Department									
☐ Health Department									
☐ Soil Conservation									
☐ N.J. Dept. of Community Affairs									
☐ N.J. Department of Transportation									
☐ N.J. Dept. of Environmental Protect.									
☐ Utility Dwg No.									
☐ Other									
☐									
☐									

IX. SUBCODES AND SPECIAL REGULATIONS APPLICABLE (office use only—optional)

Name of Code & Edition	Name of Code & Edition	Other
Building _____	Energy _____	_____
Electrical _____	Barrier Free _____	_____
Plumbing _____	Flood Hazard _____	_____
Fire Protection _____	As Built Elevation Cert. _____	_____
Mechanical _____	Other _____	_____

X. CERTIFICATES ISSUED (office use only)	DATE EXPIRED
☐ Temporary Certificate of Occupancy	No. _____
☐ Temporary Certificate of Occupancy	No. _____
☐ Continued Certificate of Occupancy	No. _____
☐ Certificate of Occupancy	No. _____
☐ Certificate of Approval	No. _____
☐ None	No. _____



CONSTRUCTION PERMIT

Date Issued

Control #

Permit #

12/20/93

2947-93

IDENTIFICATION Block

1421

Lot

14

Work Site Location

2252 Lincoln Pl. Rd.

Contractor

Wardell O. Scurry

Owner In Fee

Brick Bldg. Education

Address

1421-1423, 1425

Address

Tele. ()

Tele. ()

Lic. No. or Bldrs. Reg. No.

Exp. Date

Federal Emp. No.

or Social Security No.

Is hereby granted permission to perform the following work:

☐ BUILDING☐ PLUMBING☐ OTHER☐ ELECTRICAL☒ FIRE PROTECTION

DESCRIPTION OF WORK:

Fire Alarm

NOTE: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$

5000

CONSTRUCTION OFFICIAL

U.C.C. Form F-170A

1 WHITE - OFFICE

2 CANARY - TAX ASSESSOR

3 PINK - JACKET

4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building

Plumbing

Electrical

Fire Protection

Other

Other

DCA Training Fee

Cert. of Occ.

Other

Total

Check No.

Cash

Collected By:



**FIRE PROTECTION
SUBCODE
TECHNICAL SECTION**



Date Received
Date Issued
Control #
Permit #

12/20/93
2947-93

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1421 Lot 14
Work Site Location HEBERTSVILLE SCHOOL
Owner in Fee 2882 LANES MILLS RD
Address BRICK TOWNSHIP BOARD OF EDUCATION
HENDRICKSON BLVD
Brick
Tele. (908) 442-2800
Contractor WARDLE SECURITY SERVICES
Address PO Box 44
HOWEL AVE 07231
Tele. (908) 363-0550
Lic. No. _____
Federal Emp. No. 22-2136934600 or Social Security No. _____

B. FIRE PROTECTION CHARACTERISTICS

Use Group _____ Present _____ Proposed _____
Const. Class. _____ Present _____ Proposed _____
Heating Systems [] New [] Existing
Type: [] Gas [] Oil [] Electrical [] Solar
[] Other _____
Location: _____
Total Est. Cost of Fire Prot. Work \$ 5000.00 [] Other _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW:	INSPECTIONS:	Dates (Month/Day)
	Type:	Failure Failure Approval Initial
[] No Plans Required	Suppression Test	
Joint Plan Review Required:	Fire Alarm Test	
[] Bldg. [] Plumb.	Smoke Test	
[] Elec. [] Elevator	Mechanical	
[X] Fire Plans Approved	TCO	
Date: <u>12/9/93</u>	Other	
Approved by: _____	Other	
SUBCODE APPROVAL:	Other	
[] CO [] CCO [] CA	Other	
Date: _____	Other	
Approved by: _____	Other	

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

12/2/93
SIGNATURE

D. TECHNICAL SITE DATA

Description of Work

Water Supply Source
Method of Valve Supervision
Local Alarm Supervision
Central Supervision
Proprietary Supervision

Flammable Liquid Storage Tanks
Combustible Liquid Storage Tanks
L.P.G. Storage Tanks
L.N.G. Storage Tanks

1. Control Sprinkler Heads

Wet Sprinkler Heads
Dry Sprinkler Heads

Full Systems
Smoke Detectors
Heat Detectors
TOTAL Bell/STROBES

Stand Pipes
Kitchen/Hood Exhaust Systems
Pre-Engineered Systems

CO₂ Suppression
Halon Suppression
Foam Suppression

Dry Chemical
Wet Chemical

Gas or Oil Fired Appliance
OTHER

Number

() Capacity
() Capacity
() Capacity
() Capacity

85-

EXM/D/T

Paid [] Check # _____	Administrative Surcharge \$ _____
Minimum Fee \$ _____	
DCA Training Fee \$ _____	
TOTAL FEE \$ _____	

INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR 2400 AND 2400TH DIRECT WIRE SMOKE DETECTORS

Before installing detectors, please thoroughly read System Sensor's Manual I56-407-XX, *Guide for Proper Use of System Smoke Detectors*. This manual provides detailed information on detector spacing, placement, zoning, wiring, and special applications. Copies of this manual are available at no charge from System Sensor (For installations in Canada refer to CAN4-S524, *Standard for the Installation of Fire Alarm Systems* and CEC Part 1, Sec. 32).

GENERAL DESCRIPTION

System Sensor 2400 photoelectronic detectors use state-of-the-art, optical sensing chambers. These detectors are designed to provide open area protection, and are intended for use with compatible UL-listed 2-wire control panels only. The detector's operation and sensitivity can be tested in place. Model 2400TH has the same specifications as model 2400, but also features a restorable, built-in, fixed temperature (135°F) thermal detection unit.

These detectors are listed to UL 268 and are latching type system detectors. When latched in alarm, the detectors must be reset by a momentary power interruption.

An LED on the detector provides a local indication of the detector's status. This LED blinks every 10 seconds when the detector is receiving power and ready in standby and is latched on continuously in alarm until the detector is reset. The detector provides an output for connection to an optional Remote Annunciator (Model RA400Z). The Remote Annunciator mounts to a single gang box and provides a supplementary alarm indication.

SPECIFICATIONS

Diameter:	5.5 inches (140 mm)
Height:	3.14 inches (80 mm) Add 0.5 Inches (13 mm) for 2400TH.
Weight:	0.7 lb. (310 gm)
Operating Temperature Range:	Model 2400 — 0° to +49°C (32° to 120°F) Model 2400TH — 0° to 38°C (32° to 100°F)
Operating Humidity Range:	10% to 93% Relative Humidity Non-condensing
Maximum Air Velocity:	3000 ft/min (15m/s)
Locking Alarm:	Reset by momentary power interruption.

ELECTRICAL RATINGS

System Voltage:	12/24 VDC
Maximum Ripple Voltage:	4 Volts peak-to-peak
Start-up Capacitance:	0.02 μ F Maximum
Standby Ratings:	8.5 VDC Minimum 35 VDC Maximum 120 μ A Maximum
Alarm Ratings:	4.2 VDC Minimum at 10 mA 6.6 VDC Maximum at 100 mA Alarm current must be limited to 100mA maximum by the control panel. If used, the RA400Z Remote Annunciator operates within the specified detector alarm currents.
Reset Voltage:	2.5 VDC Minimum
Reset Time:	0.3 S Maximum
Start-up Time:	34 S Maximum

MOUNTING

Each 2400 detector is supplied with a mounting bracket kit that permits the detector to be mounted:

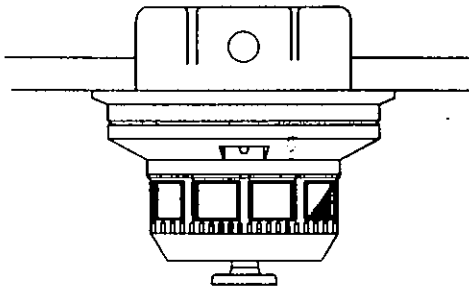
1. Directly to a 3-1/2 inch or 4 inch octagonal, 1-1/2 inch deep electrical box, (See Figure 1) or;
2. To a 4 inch square electrical box by using the plaster ring with the supplied mounting bracket kit.

SPACING

NFPA 72E defines the spacing requirements for smoke detectors. Typically, this is 30 feet when the detectors are installed on a smooth ceiling. However, ALL installations must comply with NFPA 72E and/or special requirements of the authority having jurisdiction.

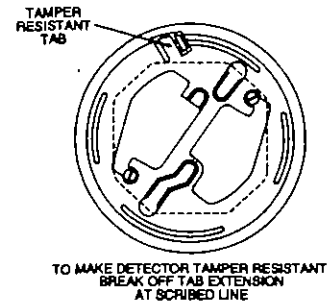
INSTALLATION WIRING GUIDELINES

All wiring must be installed in compliance with the National Electrical Code and all applicable local codes, and any special requirements of the local authority having jurisdiction. Proper wire gauges should be used. The conductors used to connect smoke detectors to control panels and accessory devices should be color-coded to reduce the likelihood of wiring errors. Improper connections can prevent a system from responding properly in the event of a fire.



A78-1411-00

Figure 1. Flush Mounting of 2400TH smoke detector on 3-1/2 inch and 4 inch octagonal box.



A78-534-00

Figure 2. 2400 Smoke detector mounting bracket.

For signal wiring (the wiring between interconnected detectors), it is recommended that the wire be no smaller than AWG 18. However, the screws and clamping plate, in the base can, accommodate wire sizes up to AWG 12. The use of twisted pair wiring for the power (+ and -) loop is recommended to minimize the effects of electrical interference.

Smoke detectors and alarm system control panels have specifications for allowable loop resistance. Consult the control panel manufacturer's specifications for the total loop resistance allowed for the control panel being used before wiring the detector loops.

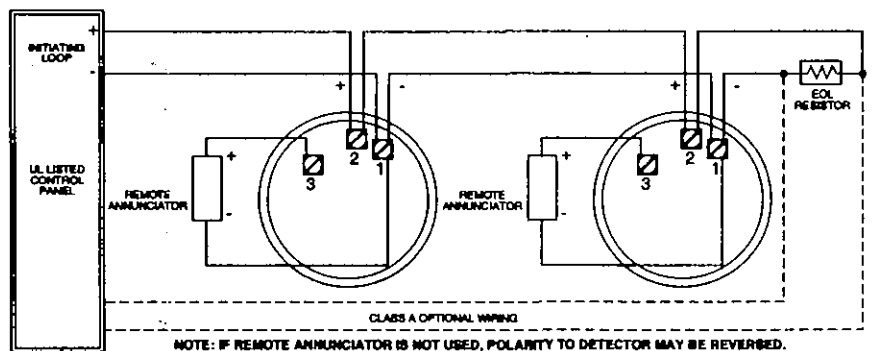
Make wire connections by stripping about 3/8 inch of insulation from the end of the wire and sliding the bare end of the wire under the clamping plate, and tightening the clamping plate screw.

A wiring diagram for a typical 2-wire detector system is shown in Figure 3.

System Sensor's smoke detectors are marked with a compatibility identifier located as the last digit of a five-digit code stamped on the back of the product. Connect detectors only to compatible control units as indicated in System Sensor's compatibility chart which contains a current list of UL-listed control units and detectors. A copy of this list is available from System Sensor upon request.

NOTE: For system supervision — do not loop wire under terminals 1 and 2.

NOTE: IF REMOTE ANNUNCIATOR IS NOT USED, POLARITY TO DETECTOR MAY BE REVERSED.



A78-1554-00

Figure 3. Wiring diagram for 2400 smoke detector used with two-wire control panel.

TAMPER-RESISTANT FEATURE

This detector includes a tamper-resistant feature that prevents removal of the detector

without the use of a tool. To make the detector tamper-resistant, break off the smaller tab at the scribed line on the tamper resistant tab, on the detector mounting bracket (see Figure 2), then install the detector. To remove the detector from the bracket once it has been made tamper resistant, use a small screwdriver to depress the tamper-resistant tab located in the slot on the mounting bracket and turn the detector counterclockwise for removal.

INSTALLATION

WARNING

Disable the power from initiating device circuits before installing detectors.

1. Wire each detector following installation guidelines.
2. Line up arrows on the detector with arrows on the mounting bracket.
3. Turn the detector clockwise until it clicks into place.
4. After all detectors have been installed, apply power to the control unit.
5. Test the detector as described under TESTING.
6. Reset the detector at the system control panel.
7. Notify the proper authorities that the system is in operation.

CAUTION

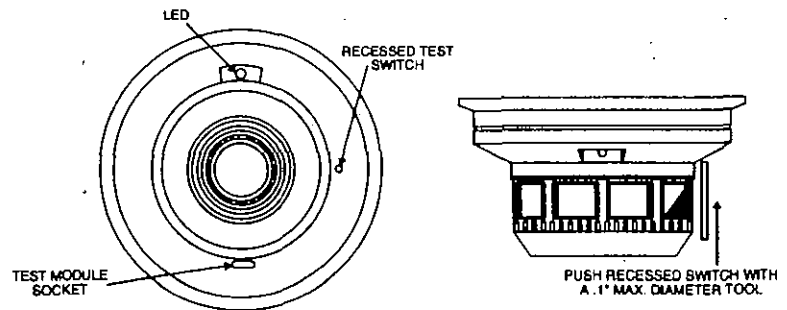
Dust covers can be used to help limit dust entry to the detector. However, these covers are not a substitute for removing the detector during building construction. Remove any dust covers before placing the system in service.

TESTING

Before testing, notify the proper authorities that the smoke detector system is undergoing maintenance, and the system will be temporarily out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms.

Detectors must be tested after installation and following periodic maintenance. The 2400/2400TH may be tested as follows:

Before testing the detector, look for the presence of the flashing LED. If it does not flash, power has been lost to the detector (check the wiring), or it is defective (return for repair – refer to Warranty information).



A78-1393-00

Figure 4. Top and side views showing position of test switch.

A. Functional Tests

Recessed Test Switch

1. A test switch is located on the detector housing (See Figure 4).
2. Press and hold the recessed test switch with a 0.1 inch maximum diameter tool.
3. The LED on the detector should light within 5 seconds.

B. Calibrated Test Card (R59-18-00)

1. Remove the detector cover by placing a small bladed screwdriver in the side slot of the detector cover, twisting it slightly until the cover can be turned counterclockwise for removal.
2. Insert the NO ALARM end of the test card fully into the test slot (See Figure 5) then slide it counterclockwise until it stops.
3. The detector should not alarm after 20 seconds.
4. Remove the test card by sliding it clockwise before removing, then insert the ALARM end.
5. The LED should latch on within 20 seconds. An alarm should also be initiated at the panel.
6. Put the cover back by gently rotating it clockwise until it locks in place.

C. Test Module (System Sensor Model No. MOD400R or MOD400)

The MOD400R or MOD400 Test Module is used with an analog or digital voltmeter to check the detector sensitivity as described in the test module's manual.

D. Aerosol Generator (Gemini 501)

Set the aerosol generator to represent 4%/Ft to 5%/Ft obscuration as described in the Gemini 501 manual. Using the bowl shaped applicator, apply aerosol until unit alarms.

E. Direct Heat Test (2400TH only)

To test the bi-metallic thermal collector on the Model 2400TH, use a low powered heat gun or blow dryer, aiming the heat source across the detector. Hold the heat source about 12 inches (30 cm) from the detector to avoid damaging the plastic. When the heat rises to greater than 135°F, the detector will latch in alarm. After the test, the bi-metallic collector will self-restore.

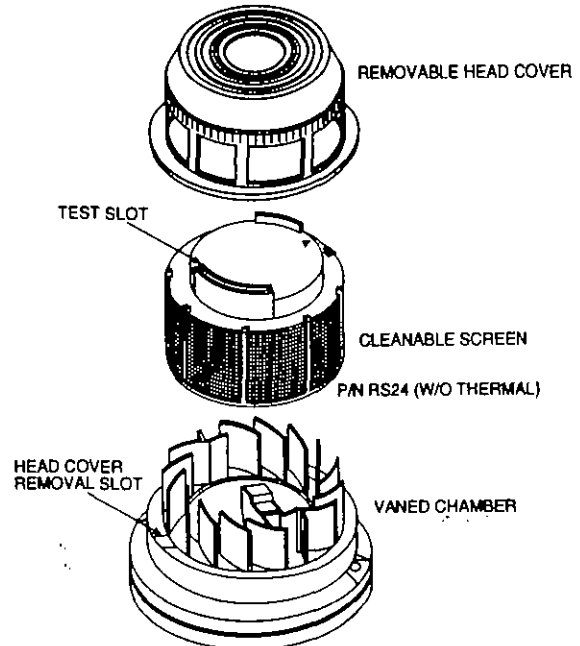
Notify the proper authorities that the system is back on line.

Clean and all detectors that fail these tests as described under MAINTENANCE and retest. If a detector still fail these tests, return it for repair.

MAINTENANCE

NOTE: Before removing the detector, notify the proper authorities that the smoke detector system is undergoing maintenance and, therefore, will be temporarily out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms.

1. Remove the detector cover by placing a small bladed screwdriver in the side slot of the detector cover, twisting it slightly until the cover can be turned counterclockwise for removal.
2. Vacuum the screen carefully without removing it. If further cleaning is required continue with step 3, otherwise skip to step 6.
3. See Figure 5. Remove the screen by pulling it straight out. Vacuum the inside.
4. Clean the vaned chamber piece by vacuuming or blowing out dust and particles.
5. To replace the screen, orient it so that the arrow on top aligns with the test module socket of the detector. Carefully push the screen onto the base, making sure it fits tightly to the chamber.
6. Replace the cover by gently rotating it clockwise until it locks in place.
7. Notify the proper authorities that the system is back on line.



A78-1213-01

Figure 5. Removal of cover and screen for cleaning.

WARNING

LIMITATIONS OF SMOKE DETECTORS

This smoke detector is designed to activate and initiate emergency action, but will do so only when used in conjunction with other equipment. This detector is designed for installation in accordance with NFPA standards 71, 72A, 72B, 72C, 72D, and 72E.

Smoke detectors cannot work without power. AC or DC powered smoke detectors will not work if the power supply is cut off for any reason.

Smoke detectors will not sense fires which start where smoke does not reach the detectors. Smoke from fires in chimneys, in walls, on roofs or on the other side of closed doors may not reach the smoke detector and alarm it.

A detector may not detect a fire developing on another level of a building. For this reason, detectors should be located on every level of a building.

Smoke detectors have sensing limitations, too. Ionization detectors offer a broad range fire-sensing capability, but they are better at detecting fast, flaming fires than slow smoldering fires. Photoelectric detectors sense smoldering fires better than flaming fires. Because fires develop in different ways, and are often unpredictable in their growth, neither type of detector is always best, and a given detector may not always provide warning of a fire. In general, detectors cannot be expected to provide warnings for fires resulting from inadequate fire protection practices, violent explosions, escaping gas, improper storage of flammable liquids like cleaning solvents, other safety hazards, or arson. Smoke detectors used in high air velocity conditions may fail to alarm due to dilution of smoke densities created by such frequent and rapid air exchanges. Additionally, high air velocity environments may create increased dust contamination, demanding more frequent maintenance.

Smoke detectors cannot last forever. Smoke detectors contain electronic parts. Even though detectors are made to last over 10 years, any of these parts could fail at any time. Therefore, test your smoke detector system per NFPA 72E at least semiannually. Clean and take care of your smoke detectors regularly. Taking care of the fire detection system you have installed will measurably reduce your product liability risks.

THREE YEAR LIMITED WARRANTY

System Sensor warrants its enclosed smoke detector to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for this smoke detector. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the repair or replacement of any part of the smoke detector which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor, Repair Department, RA # _____, 3825 Ohio Avenue, St. Charles, IL 60174. Please describe the suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

SYSTEM SENSOR™

A DIVISION OF PITTMAN

INSTALLATION INSTRUCTIONS FOR MODELS: MA-12/24D* Electronic Sounder, SS-12, SS-24* Electronic Strobe, MA/SS-12D, MA/SS-24D* Sounder/Strobe combined

*ULC models add suffix "A".

GENERAL DESCRIPTION

The National Fire Protection Association has published standards and recommended practices for the installation and use of the above appliances. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local fire authority having jurisdiction.

The electronic Multi-Alert sounder and the supplementary signaling strobe are intended to be connected to the alarm indicating circuit of a listed fire alarm control panel. The model MA-12/24D is suitable for connection to either a 12 or 24 vdc panel. Models SS-24, MA/SS-24D require 24 volt panels, models SS-12 and MA/SS-12D require 12 volt panels. Model MA-12/24D is suitable for outdoor applications (-35°C to 66°C) when used with a Weatherproof Back Box (Model WBB). In Canada, rigid steel conduit must be used when installing the Weatherproof Back Box. The signaling strobe is not suitable for outdoor applications (0 - 49°C).

There are eight different sounds which can be selected by adding or removing tab clips. The sound selected will determine the maximum current and sound power output per device. See tone selection chart for these values.

MA-12/24D Tone Selection Chart

first sound (Hz)	clips on tabs (Note 5)	current (mA) (Note 1)			output (dBA) (Note 2)		output (dBA) (Note 3)	
		12V	24V	30V	12V	24V	12V	24V
Slow Whoop	ABC	22	50	55	86	91	79	82
800 Continuous	BC	21	44	50	85	91	79	85
800-1000 Alt.	AC	21	44	50	87	93	79	85
2400 Interrupted	AB	22	45	50	87	92	82	88
2400 Continuous	C	21	44	50	85	90	85	91
Bell/Chime (Note 4)	B	10	20	25	82	87	73	82
Swept Frequency	A	21	45	52	85	92	82	85
Fast Warble	None	21	45	50	86	91	79	82

Note 1: With Strobe add 50 mA @ 12V, 25 mA @ 24V, 30 mA @ 30V, and 40 mA @ 24V for suffix "A" models.

Note 2: Sound output measured in anechoic room at 10 feet.

Note 3: Sound output measured in UL reverberant room.

Note 4: The bell/chime tone may be used for private or public mode in the fire alarm service when used with a 24 volt panel. It may be used only in the private mode when used with a 12 volt panel.

Note 5: Refer to Figure 3 on page 3 for tab clip removal & storage.

Under no circumstances can the MA/SS-24D input voltage exceed 33 VDC or be less than 18 VDC. Under no circumstances can the MA/SS-12D input voltage exceed 15 VDC or be less than 9.6 VDC.

There are some applications where it would be desirable to drive the sounder and strobe as independent devices. The System Sensor sounder/strobe combination model MA/SS-12D or MA/SS-24D are easily configured for this feature. The terminal connection for this application is shown in the wiring diagram Figure 5. Independent strobe operation in a "coded" system requires a separate "non-coded" power supply for the strobe.

To calculate battery requirements, use current values shown above. It should be noted, however, that there is an in-rush current associated with strobe power-up. This information may be used in consideration of fuse selection.

This in-rush current, as can be seen in Figure 1 for the 12V strobe, typically peaks at 3A and drops to nominal in 600µs.

For the 24V strobe, as shown in Figure 2, the in-rush current typically peaks at 7.0A, then drops to nominal in 800µs.

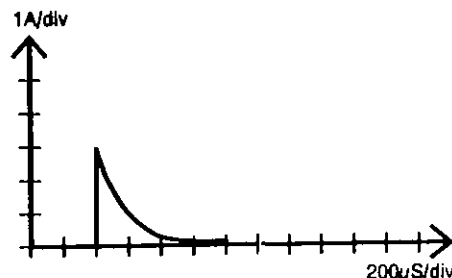


Figure 1.
12V strobe in-rush current

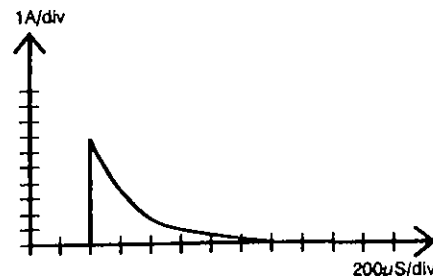


Figure 2.
24V strobe in-rush current

INSTALLATION

A. General:

Slotted head screws are used to attach each device or combination of devices to the electrical outlet box. Phillips head screws are used to attach accessories to the horn.

CAUTION: Do not loop wires under the terminal screw. Wires connecting the device to the panel must be broken at the device terminal connection in order to maintain electrical supervision.

The sounder is 1-1/4" deep. Back boxes should be 4" square by 1-1/2" deep minimum; 2-1/8" deep is recommended.

B. Sounder/Strobe combination mounting:

The strobe is not permanently screwed to the sounder at the factory because the orientation of the word "FIRE" must be determined at the installation site. Determine the two holes which will be used to mount the sounder/strobe combination to the electrical outlet box. Attach the strobe using the other two holes.

1. Surface or semi-flush mounting:

Attach the strobe to the sounder using two 1-inch phillips head screws and two nuts.

2. Flush mounting:

Remove the plastic flashing from two of the flush mount plate strobe slots using a 1/8-inch straight blade screwdriver. Remove the strobe from the sounder. Insert the strobe terminals into the plate slots, and mount the plate and strobe to the sounder using two 1-inch phillips head screws and two nuts in the holes not used to mount the sounder/strobe to the outlet box.

The quick disconnect terminal of the red wire is then attached to the strobe terminal nearest the "F" in FIRE (printed on the lens) using needle nosed pliers. The spade lug end of the wire is attached to the appropriate terminal of the field wiring terminal block. (See wiring diagrams Figures 4, 5, and 6). In the same manner, the black wire is attached to the remaining strobe terminal and the terminal block.

C. Surface mounting: (See Figures 7, 8, and 9).

D. Semi-flush mounting: (See Figures 10 and 11).

Mount the plate to the electrical outlet box or the plaster ring using the 5/8-inch slotted screws (#8 if to box, #6 to plaster ring).

***NOTE:** If a combination sounder/strobe is being installed, it is necessary to first attach the strobe to the sounder. See section B.

E. Flush mounting: (See Figures 12 and 13).

NOTE: Flush mounting requires the use of the deep box model BB-D or equivalent.

Determine which of the two device mounting holes will be used to attach the device to the box. Mount the flush plate to the sounder using two 1-inch phillips head screws and two square nuts in the mounting holes not used to mount the device to the box. Mount the plate between the strobe and sounder if the strobe is used (see section B).

Installation procedures must conform to appropriate agency requirements including but not limited to the following:

NFPA 72E, NEC ART. 760 ET.AL., CAN/ULC-S524-M86, CEC PART 1 SEC 32

CAUTION: The rated output of the sounder is specified at 10 feet. It should not be assumed that the output will meet the NFPA requirement of 15 dB over ambient noise at all locations within a room. Additional sounders may be needed to ensure sound output level complies with NFPA requirements.

WARNING

LIMITATIONS OF SOUNDER/STROBE:

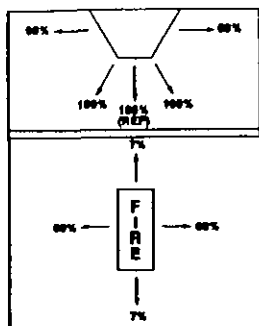
The Sounder and/or Strobe will not work without power. The sounder/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the sounder/strobe will not provide the desired audio or visual warning.

The Sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The Sounder may not be heard if it is placed on a different floor from the person in hazard or if placed too far away to be heard over the ambient noise such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. **The Sounder may not be heard by persons who are hearing impaired.**

The Signal Strobe may not be seen. The electronic visual warning signal that flashes at least once every three seconds meets or exceeds current Underwriters Laboratories' standards and uses an extremely reliable xenon flash tube. The visual warning signal is suitable for direct viewing and must be installed within an area where it can be seen by building occupants. The strobe must not be installed in direct sunlight or areas of high light intensity (over 60 foot candles) where the visual flash might be disregarded or not seen. **The strobe may not be seen by the visually impaired.**

The signal strobe may cause seizures. Individuals who have a positive photic response to visual stimuli with seizures, such as epileptics, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

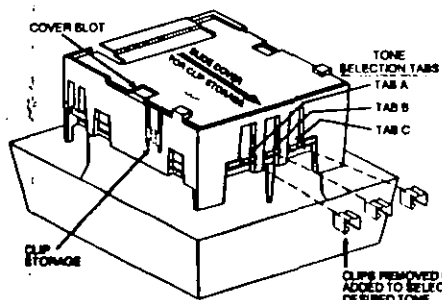
System Sensor recommends that the Multi-Alert Sounder and Signal Strobe always be used in combination so that the risks from any of the above limitations are minimized.



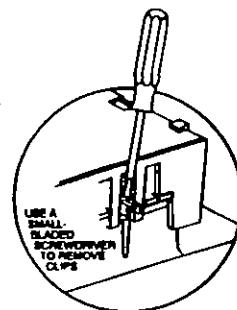
A78-1563-00

Light output vs.
viewing angle

Strobe output
1 candela
minimum



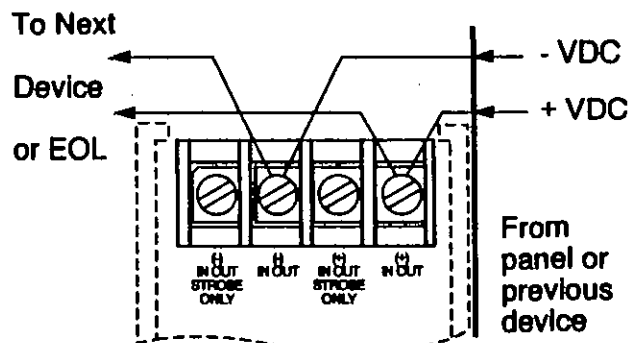
FOR STORMS UNLATCHED CLIPS:
SLIDE COVER BACK TO ALIGN COVER BLOT
WITH CLIP STORAGE POST.



A78-2187-00

Figure 3

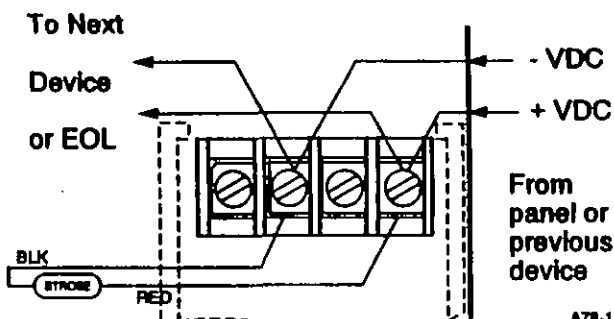
MULTI-ALERT SOUNDER



A78-1137-00

Figure 4

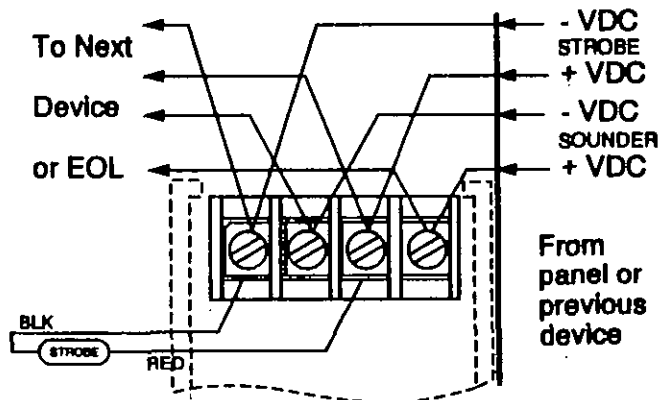
MULTI-ALERT SOUNDER AND STROBE OPERATING IN TANDEM



A78-1137-02

Figure 5

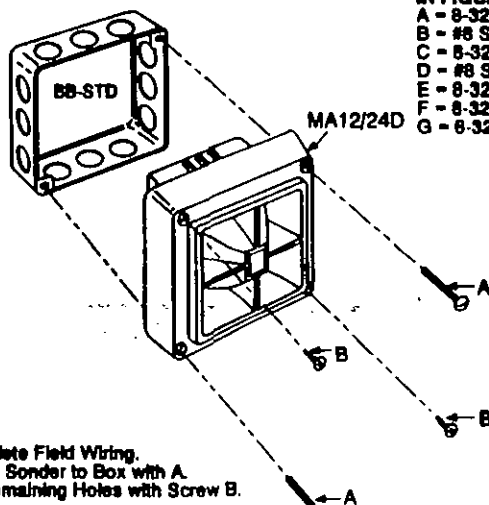
MULTI-ALERT SOUNDER AND STROBE OPERATING INDEPENDENTLY



A78-1137-01

Figure 6

SOUNDER SURFACE MOUNT

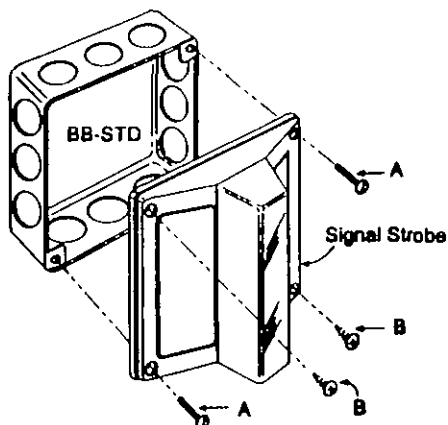


1. Complete Field Wiring.
2. Screw Sounder to Box with A.
3. Fill Remaining Holes with Screw B.

A78-1137-03

Figure 7

STROBE SURFACE MOUNT

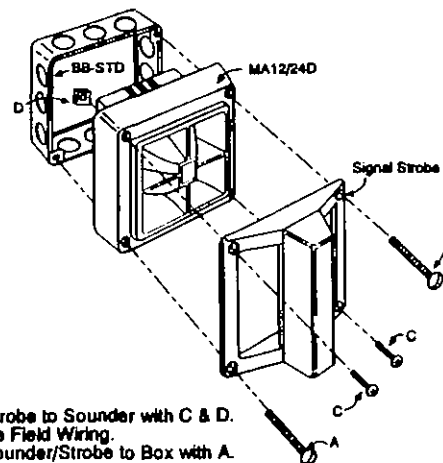


1. Complete Field Wiring.
2. Screw Strobe to Box with A.
3. Fill Remaining Holes with Screw B.

A78-1137-04

Figure 8

SOUNDER/STROBE SURFACE MOUNT

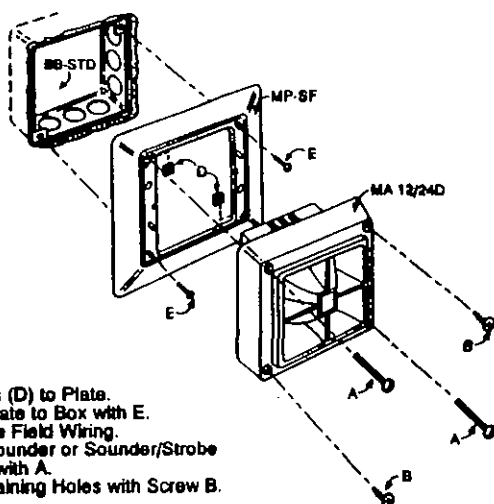


1. Screw Strobe to Sounder with C & D.
2. Complete Field Wiring.
3. Screw Sounder/Strobe to Box with A.

A78-1137-06

Figure 9

SOUNDER SEMI-FLUSH MOUNT

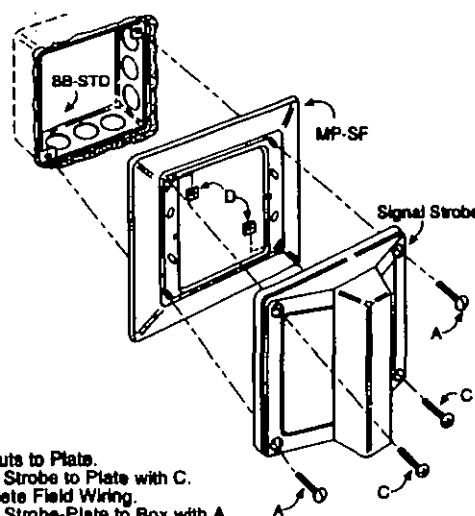


1. Add Nuts (D) to Plate.
2. Screw Plate to Box with E.
3. Complete Field Wiring.
4. Screw Sounder or Sounder/Strobe to Plate with A.
5. Fill Remaining Holes with Screw B.

A78-1137-08

Figure 10

STROBE SEMI-FLUSH MOUNT



1. Add Nuts to Plate.
2. Screw Strobe to Plate with C.
3. Complete Field Wiring.
4. Screw Strobe-Plate to Box with A.

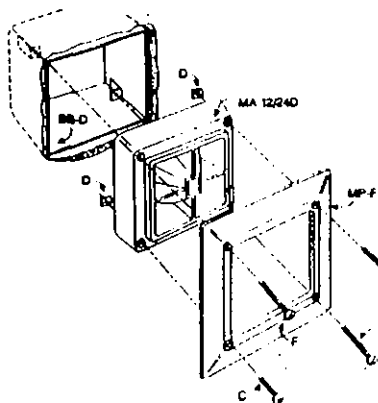
A78-1137-07

Figure 11

FLUSH MOUNTING

SOUNDER FLUSH MOUNT (DEEP BOX REQUIRED)

1. Add nuts (D) to Plate.
2. Complete Field Wiring.
3. Screw Plate-Sounder to Box, F.

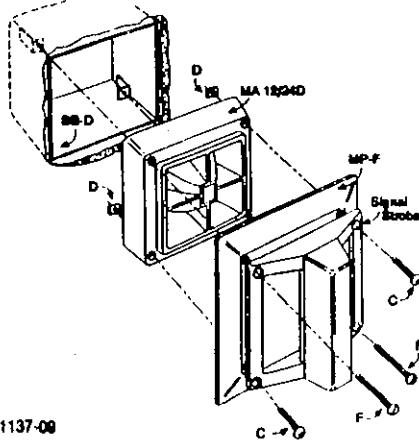


A78-1137-08

Figure 12

SOUNDER/STROBE FLUSH MOUNT (DEEP BOX REQUIRED)

1. Screw Strobe & Plate to Sounder, C & D.
2. Complete Field Wiring.
3. Screw Sounder/Strobe to Box, F.

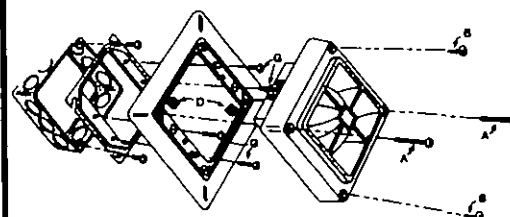


A78-1137-08

Figure 13

PLASTER RING MOUNT

1. Plaster Ring should be properly mounted to Electrical Box with screws supplied w/box.
2. Add Nuts D to Plate.
3. Screw Plate to Plaster Ring with G.
4. Complete Field Wiring.
5. Screw Sounder to Plate with A.
6. Fill Remaining Hole with Screw.
7. To add Strobe to Sounder, add Two Nuts D to Sounder, replace screws B with C. See Figure 9 for detail.



A78-1137-10

Figure 14



Wardell Security Services

Subsidiary of Wardell Enterprises Inc.

May 26, 1993

Brick Township Board of Education
101 Hendrickson Ave.
Brick, NJ 08724-2599

Re: Upgrade of Fire Alarm System
Herbertsville School

BRICK TOWNSHIP
Plan Review Class Date B
Zoning _____
Plumbing _____
Building _____
Fire 12/9/93 *[Signature]*
Energy _____
Electrical _____

Equipment to be installed

Thirty-six (36) Rate of Rise Heat Detectors
Nine (9) Smoke Detectors
Twelve (12) Pull Stations
Six (6) Bell Strobes

One (1) NAPCO 6024 four zone fire control panel with
rechargeable standby battery

One (1) Remote annunciator - to be located in the office

Installation Price.....\$5075.00

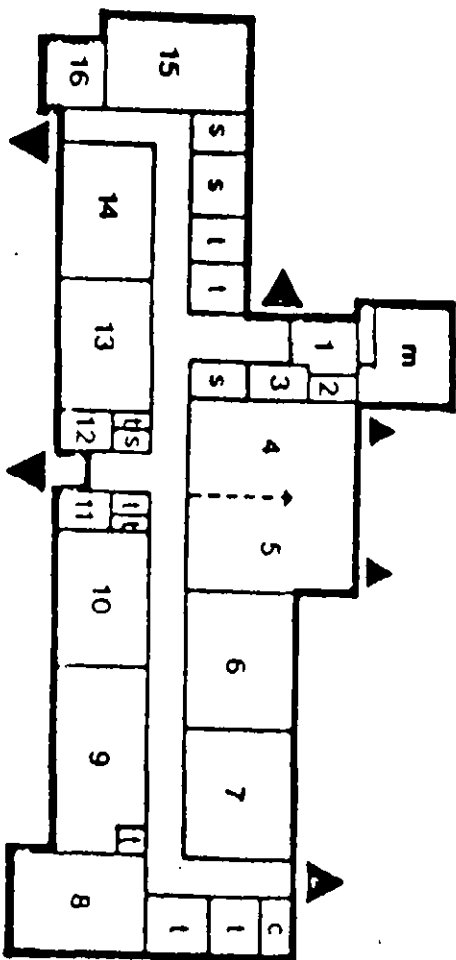
WARDELL SECURITY SERVICES

Edward B. Wardell
President

50,000

*Accepted BY Architect
10/6/93*

[Signature] *5,000*



FLOOR PLAN

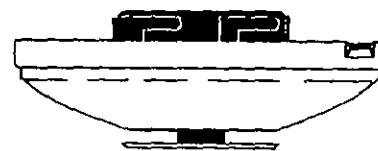
no.	area	function
1	180	kitchen
2	66	nurse
3	140	i. m. c.
4	810	classroom
5	810	classroom
6	760	classroom
7	760	classroom
8	690	classroom
9	900	kindergarten
10	700	kindergarten
11	90	teachers' room
12	90	general office
13	600	classroom
14	600	classroom
15	600	special education
16	180	principal's office

BRICK TOWNSHIP
Plan Review
Zoning
Plumbing
Building
Fire
Energy
Electrical

12/19/03
[Signature]

477-2800
222

INSTRUCTIONS FOR THIS HEAT DETECTOR



(NOT A LIFE SAFETY DEVICE - USE FOR PROPERTY PROTECTION ONLY)

Refer to the Specifications and Precautionary Information sheet supplied with this device before installing.

OPERATION

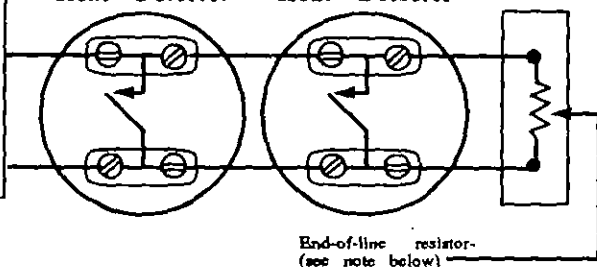
Rate-of-Rise (applicable models only): A temperature increase of 15° or more per minute closes contacts in the detector. When the rate-of-rise element alone has been activated, the detector is self-restoring.

Fixed Temperature (all models): If the temperature of the center disk rises to the detector's rated temperature (135°F or 194°F), contacts in the detector close. When actuated by the fixed temperature element, the detector is nonrestorable and must be replaced. The need for replacement is indicated when the center disk has fallen free.

Listed
Fire
Alarm
Control
Panel

(see
note
below)

Heat Detector Heat Detector



End-of-line resistor
(see note below)

NOTE:

REFER TO WIRING DIAGRAMS PROVIDED WITH
CONTROL PANEL FOR;

- (1) PROPER PANEL CONNECTIONS, AND
- (2) PROPER END-OF-LINE RESISTOR VALUE.

Figure 3. Installation wiring connections to detector.

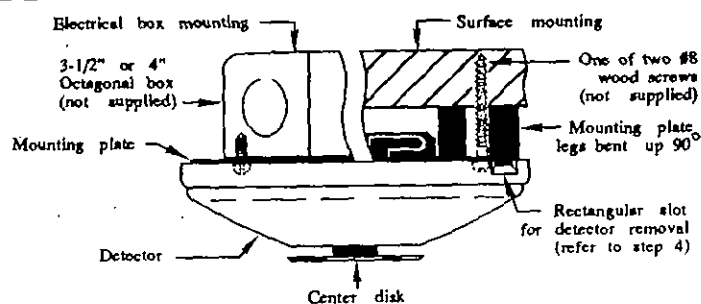
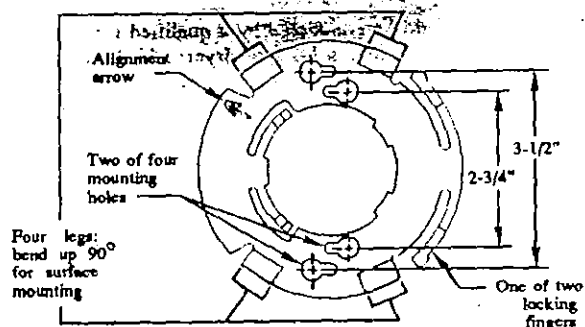


Figure 1. Detector installation using metal mounting plate.

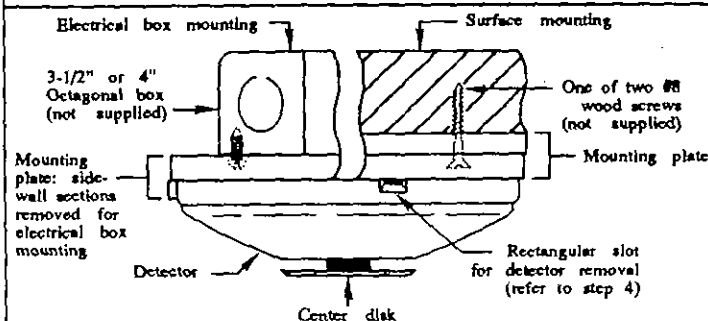
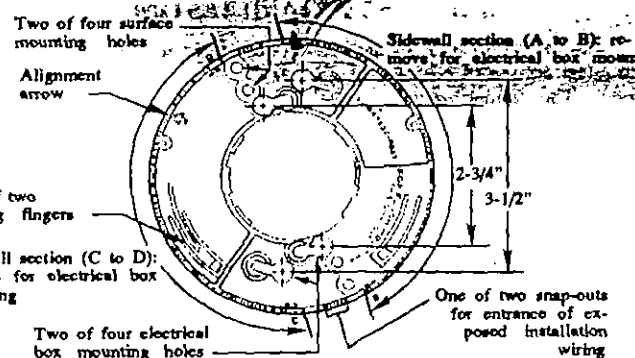


Figure 2. Detector installation using plastic mounting plate.

WARNINGS, continued

2. This device does not contain a built-in signal. Alarm signals can only be generated by interconnection with separately installed signaling devices.
3. **DANGER** - This device will not operate without electrical power and fires often cause cutoffs of electrical power. This device does not contain a battery backup power supply. If the electrical circuit feeding the device is cut, or is not providing power for any reason, this device will not detect heat or provide any warning of a possible fire, nor will it provide any warning that it is not functioning.
4. **DANGER** - The rate-of-rise feature on the Heat Detector is subject to failure over time. The rate-of-rise feature should be tested by a qualified fire protection specialist annually to ensure that it is in working order. A plastic shield, part number P-847567-0017, is available to protect the fixed temperature element of the 281B and 282B series heat detectors during rate-of-rise testing. The testing procedure for the rate-of-rise feature is specified in the "Maintenance and Testing" section of instruction sheet P-847550-0820 supplied with this device. If a fire protection specialist is not available to conduct this testing procedure, you should contact your Edwards representative to arrange to have these important tests performed.

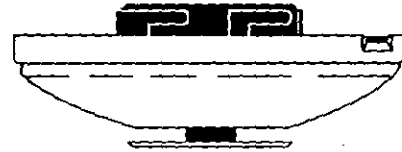
© Copyright 1988



P-847550-0819

Issue 1

SPECIFICATIONS AND PRECAUTIONARY INFORMATION FOR THE 280B SERIES HEAT DETECTORS



(NOT A LIFE SAFETY DEVICE - USE FOR PROPERTY PROTECTION ONLY)

**READ THE INSTRUCTIONS SUPPLIED (P-847550-0820)
BEFORE INSTALLING THIS DEVICE**

Edwards Company, Inc., 195 Farmington Avenue, Farmington, CT 06032

SPECIFICATIONS TABLE

atalog Number (see note A)	281B	282B	283B	284B
L Temperature Rating	135°F	194°F	135°F	194°F
ature(s)	Fixed Temperature and Rate-of-Rise		Fixed Temperature Only	
L Maximum Ambient emperature at Ceiling	100°F	150°F	100°F	150°F
L Recommended Coverage (see note B)	2500 Square Feet			
L Recommended Spacing	50 Feet			
Maximum Distance from Wall - (see note C)	25 Feet			

All detectors have one normally open contact rated as follows: 3.0A at 6 to 125Vac, 1.0A at 6 to 24Vdc, 0.3A at 125Vdc, and 0.1A at 250Vdc.

NOTE A - A catalog number ending with -PL indicates detector is supplied with reversible plastic mounting plate.

NOTE B - Maximum detector coverage has been determined by UL to provide detection time equal to sprinkler devices spaced at 10-ft intervals (100 square foot area) on a smooth ceiling 15 ft 9 in high. Higher ceilings can adversely affect detection time. In some instances, earlier detection may be obtained by reducing the spacing between detectors. See the latest edition of the NFPA 72B, Automatic Fire Detectors.

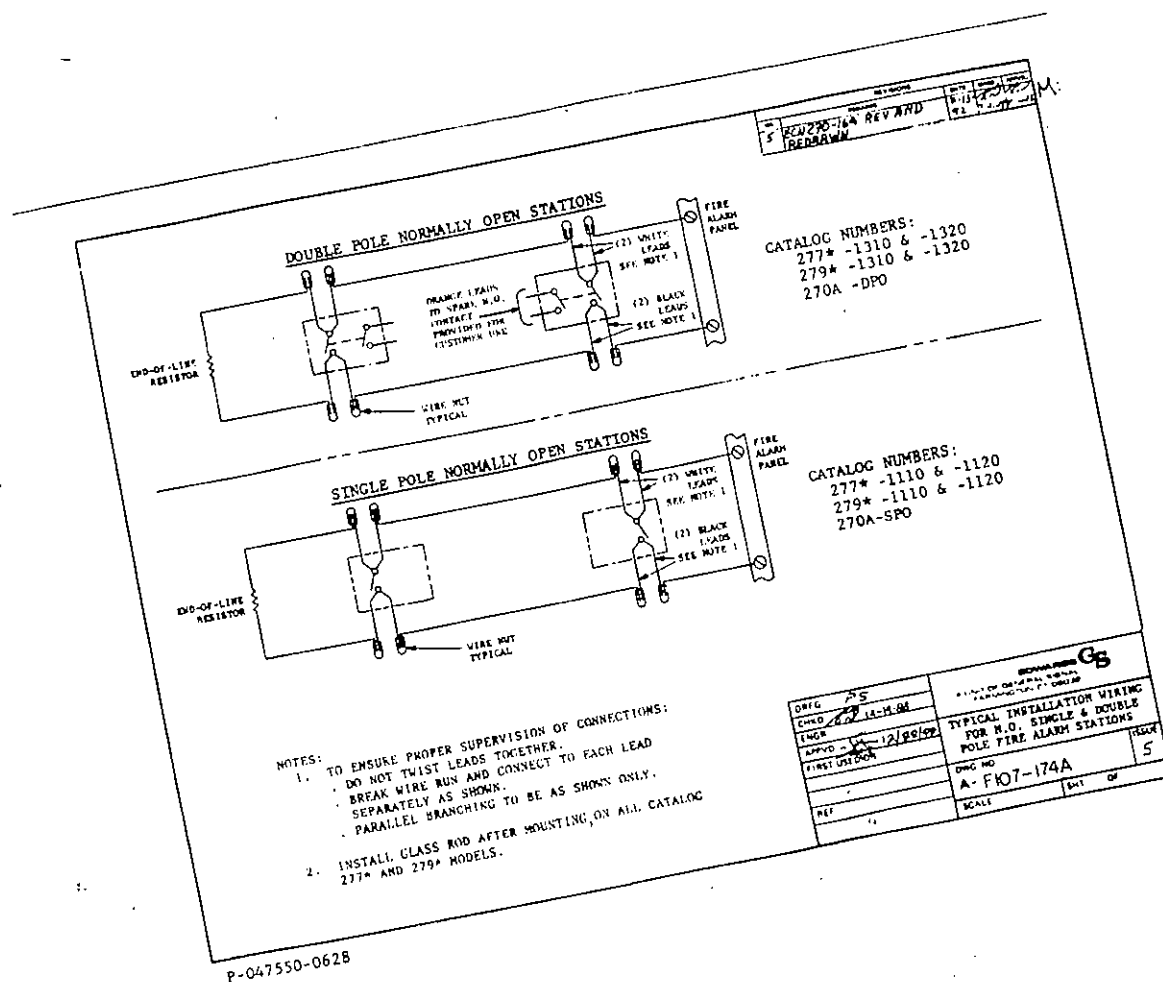
NOTE C - Maximum distance shown is from any wall partition or ceiling projection extending down more than 12 inches.

WARNINGS

1. This device does not protect life against fire and smoke. In most fires, hazardous levels of smoke, heat and toxic gases can build up before a heat detector would operate. Independent studies indicate that heat detectors should only be used when property protection alone is involved. In cases where life safety is a factor, the use of smoke detectors is recommended.

The intended use of this Heat Detector is to provide one source of information that is supplemental to smoke detection to increase the probability that an early warning will be provided so that property can be safeguarded. Heat detectors do not always detect fires because the fire may be a slow smoldering low heat type (producing smoke) or because they may not be near where the fire occurs, or because the heat of the fire may bypass them. This detector will not detect oxygen levels, smoke, toxic gases, or flames. Accordingly, this device should only be used as a part of a broadly based program of fire safety which would include a variety of sources of information on heat and smoke levels, visual siting of the fire, extinguishment systems, and other safety measures.

If they are spaced in accordance with the directions in the "Specifications Table" they can contribute, within an overall fire safety program, to reducing the risk of avoidable property losses. Under no circumstances should these devices be relied on as the sole measure to ensure fire safety. **Danger** will result if these devices are relied on to any degree for the protection of human life.



INSTALLATION

1. Select location for detector on ceiling. Do not locate in direct path of hot or cold air flow. Refer to the Specifications and Precautionary Information sheet for recommended maximum spacing. Earlier warning may be obtained by reducing the spacing between detectors. Exposed circuit wiring may be used when the heat detector is installed on a power-limited alarm initiating circuit which meets the requirements given in the latest edition of the National Electrical Code (NEPA 70), Article 760, Part C. Exposed circuit wiring must use power-limited cables meeting these requirements.

2. The detector may be mounted either to an electrical box or surface mounted using the supplied metal or optional plastic mounting plate. Install the plate using one of the following applicable mounting procedures.

Electrical Box Mounting

a. Using metal plate: See Figure 1. Install a standard 3-1/2 or 4 inch octagonal electrical box (not supplied). With either side of the plate facing out, align appropriate pair of mounting holes in the plate with the electrical box screws and install the plate on the box.

b. Using plastic plate: See Figure 2. Install a standard 3-1/2 or 4 inch octagonal electrical box (not supplied). Remove the two sidewall sections, located between points A to B and C to D, from the plate as indicated. With the side of the plate marked "FOR FLUSH MOUNTING" facing out, align appropriate pair of electrical box mounting holes in the plate with the electrical box screws and install the plate on the box.

MAINTENANCE AND TESTING

The requirements for maintenance and testing of heat detectors are covered in the latest edition of NFPA 72E, Chapter 8 (Inspections, Tests and Maintenance). The standard requires that:

For initial installation: all restorable heat detectors (rate-of-rise feature) be tested immediately after installation.

For periodic testing:

For restorable heat detectors (rate-of-rise feature) one or more detectors each initiating circuit be tested at least semiannually. Different detectors should be selected for each test so that all detectors are tested within one year.

For nonrestorable heat detectors (fixed temperature element on all models), after the fifteenth year at least two detectors out of every hundred, or fraction thereof, be removed every five years and sent to a testing laboratory for tests. These detectors must be replaced with new detectors since the fixed temperature element destroys the detector. See the latest edition of NFPA 72E, Chapter 8 (Inspections, Tests and Maintenance) for additional details.

NFPA 72E notes that the authority having jurisdiction may accept a greater or lesser frequency for periodic testing of heat detectors. In addition to NFPA requirements for periodic testing of restorable heat detectors, it is recommended that the rate-of-rise feature of each model in the system be tested at least annually since this feature is subject to reduced sensitivity over time (see WARNING 4 in the Specifications and Precautionary Information

Surface Mounting

a. Using metal plate: See Figure 1. Using pliers, bend the four mounting plate legs up 90°F as shown. Position the plate with the legs against the mounting surface and fasten the plate to the surface by installing two #8 wood screws (not supplied) or other suitable fasteners through either the inner or outer pair of mounting holes in the plate.

b. Using plastic plate: See Figure 2. When using exposed installation wiring, remove either or both snapouts for wire entrance from the plate, as required. With the side of the plate marked "For Surface Mounting" facing out, fasten the plate to the surface by installing two #8 wood screws (not supplied) or other suitable fasteners through either the inner or outer pair of surface mounting holes in the plate.

3. Route the installation wiring either through the center hole in the mounting plate when the wiring is concealed, or through the openings in the side of the plate when the wiring is exposed. Connect the wiring to the detector as shown in Figure 3.

4. To install the detector: Align the arrows on the mounting plate and on the detector base, seat the detector on the plate and turn the detector clockwise until it locks in place.

To remove the detector: Insert the tip of a screwdriver into the rectangular slot in the side of the detector base (see applicable mounting illustration for location of slot), lift the locking finger of the mounting plate, and turn the detector counterclockwise until it can be withdrawn from the plate.

Information sheet supplied with this device for additional details).

The rate-of-rise test should be conducted by a qualified fire protection specialist using a 1,000-watt heat gun (or hair dryer). Under normal ambient conditions with an air velocity at the detector of 400 feet per minute, or less, the detector's contacts should close within 10 seconds when the heat gun nozzle is located approximately 6 inches from the detector. For every additional 400 feet per minute of air velocity, the heat gun to detector spacing should be reduced by one inch (e.g. 400-800 FPM, 5 inches; 800-1,200 FPM, 4 inches, etc.).

Caution must be taken to prevent operating the nonrestorable fixed-temperature element (center disk) during this test. If the fixed temperature element operates, the detector must be replaced.